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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/051,860  
Filing Date: January 16, 2002  
Appellant(s): BERGMAN, ERIC

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Kenneth H. Ohriner  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the Order Returning Undocketed Appeal to the Examiner dated  
June 29, 2009.

The Examiner's Answer dated August 27, 2007 is hereby vacated in favor of the following Examiner's Answer.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

This appeal involves claims 1, 5-10, 12-18 and 33-35.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

No amendment after final has been filed.

**(5) Summary of Claimed Subject Matter**

Appellant filed an Appeal Brief dated June 8, 2007. The Appeal Brief is not in compliance with 37 CFR § 41.37(c) effective September 13, 2004. According to 37 CFR § 41.37(c) (v), an Appeal Brief must include the following:

(v) *Summary Of Claimed Subject Matter.* A concise explanation of the subject matter defined in each of the independent claims involved in the appeal, which must refer to the specification by page and line number, and to the drawing, if any, by reference characters. While

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reference to page and line number of the specification \*\*>requires somewhat more detail than simply summarizing the invention, it is considered important to enable the Board to more quickly determine where the claimed subject matter is described in the application. >For each independent claim involved in the appeal and for each dependent claim argued separately under the provisions of 37 CFR 41.37(c)(1)(vii), every means plus function and step plus function as permitted by 35 U.S.C. 112, sixth paragraph, must be identified and the structure, material, or acts described in the specification as corresponding to each claimed function must be set forth with reference to the specification by page and line number, and to the drawing, if any, by reference characters.

The "Summary of claimed subject matter" appearing on pages 2-3 of the Appeal Brief filed June 8, 2007 is deficient because it does not separately map independent claims I, 16 and 35 to the specification.

Correction is required.

MPEP § 1205.03 states in part:

(B) When the Office holds the brief to be defective solely due to appellant's failure to provide a summary of the claimed subject

matter as required by 37 CFR 41.37(c)(1)(v), an entire new brief need not, and should not, be filed. Rather, a paper providing a summary of the claimed subject matter as required by 37 CFR 41.37 (c)(1)(v) will suffice. Failure to timely respond to the Office's requirement will result in dismissal of the appeal. See MPEP § 1215.04 and § 711.02(b).

#### **(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

#### **(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

#### **(8) Evidence Relied Upon**

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5,181,985	Lampert et al.	1-1993
5,868,866	Maekawa et al.	2-1999
5,927,306	Izumi et al.	7-1999
6,202,658	Fishkin et al.	3-2001
6,325,081	Miki et al.	12-2001
6,758,938	Torek et al.	7-2004
1-95522	Kobayashi (Japan)	4-1989

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 5-10, 12-18, 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Torek et al. (U. S. Pat. No. 6,758,938) in view of Japan 1-955222 (Japan'522), Izumi et al. (U. S. Pat. No. 5,927,306), Miki et al. (U. S. Pat. No. ,325,081) or Fishkin et al. (U. S. Pat. No. 6,202,658).

Re claim 1, Torek is cited disclosing an apparatus for processing a workpiece comprising:

a liquid supply source (pool 95);

one or more liquid outlets (75) disposed to apply a layer of liquid onto the workpiece (see col. 2, lines 46-57);

a liquid flow line (see fig 2) extending between the liquid supply source and the one or more liquid outlets for carrying liquid to the liquid outlets;

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at least one heater (45) for heating the liquid before it is applied onto the workpiece;

an ozone gas supply system (as at 100) which provides ozone gas around the workpiece (see abstract) while the layer of heated liquid is on the workpiece that differs from the claim only in the recitation of the a sonic energy source associated with the liquid outlets. Japan'522, Izumi, Fishkin and Miki are each cited disclosing that it is old and well known in the art of washing/cleaning semiconductor workpieces, to have sonic energy associated with liquid outlets so as to provide sonic energy to the washing/cleaning liquid as the same is direct to the semiconductor workpiece. It therefore would have been obvious to one having ordinary skill in the art to modify the outlets of Torek, to include sonic energy associated therewith as taught by Japan'522, Izumi or Miki, for the purpose of enhancing the cleaning process. It is old and well known in the art to employ the use or of sonic/vibrational energy to a liquid, for the purpose of increasing the effectiveness of the washing process. Note for example that Miki clearly suggests that by applying high frequency sound waves it is possible to "increase the washing effects" and to "shorten washing time" (see Miki col. 6, lines 64-67). All of the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination, (i.e., the combination of known old elements into a single device) would have yielded predictable results to one of ordinary skill in the art at the time of the invention. Re claim 5, Izumi discloses the focusing chamber (as at 30) for the sonic energy. Re claim 6, with Torek being previously shown

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to disclose a heater, it is understood that Torek functions to heat the liquid in the reservoir as claimed. Also, absent any new or unobvious results, it is old and well known to rearrangement components of a device/apparatus in various location while still functioning as desired (see MPEP 2144.04 REVERSAL, DUPLICATION OR RE-ARRANGEMENT OF PARTS). Re claim 7, Torek, Japan'522 and Miki disclose the treatment fluids as claimed. Re claim 8, Torek, Izumi and Miki disclose the chamber. Re claim 9, Torek discloses the re-circulation as claimed. Re claim 10, Torek discloses the rotor (see fig. 5). Re claims 12-14, Torek (see col. 2, lines 46-57) discloses the controlling of the layer thickness and spray nozzles as claimed. Re claim 15, Torek (see col. 9, lines 9-11) discloses the controlling of the thickness as claimed.

Re claim 16, Torek is cited as applied above disclosing an apparatus for treating the surface of a workpiece comprising:

- a liquid reservoir for holding a process liquid;

- a process chamber;

- liquid spray nozzles (75) within the process chamber disposed to spray liquid onto the workpiece held by the workpiece holder;

- a liquid flow line extending between the liquid reservoir and the liquid spray nozzles;

- a rotor (85) in the process chamber for holding a workpiece and rotating a workpiece to form liquid on the workpiece into a layer (col. 2, lines 7-21);

- an ozone generator (see col. 6, lines 25-30) for generating a supply of ozone;

one or more ozone supply lines (not shown) extending from the ozone generator to the process chamber, and with ozone gas in the process chamber diffusing through the layer of liquid (col. 2, lines 13-24) and oxidizing contamination on the workpiece (inherent since it is understood that this is a function of ozone); and

at least one heater (45) for heating the process liquid, that differs from the claim only in the recitation of the rotor holding a single workpiece and sonic energy source associated with the liquid outlet for introducing sonic energy to the workpiece, with the sonic energy assisting to expose fresh contamination and rendering it more subject to oxidation. In regard to the rotor holding a single workpiece, clearly the rotor of Torek is capable of holding a single workpiece if so desired, and the claimed subject matter is therefore of little patentable weight. Japan'522, Izumi, Fishkin and Miki are each cited disclosing that it is very old and well known to in the art of processing semiconductor workpieces, to have sonic energy associated with liquid outlets as claimed. It therefore would have been obvious to one having ordinary skill in the art to modify the outlets of Torek, to include sonic energy associated therewith as taught by Japan'522, Izumi or Miki, for the purpose of enhancing the cleaning process. It is old and well known in the art to employ the use or of sonic/vibrational energy to a liquid, for the purpose of increasing the effectiveness of the washing process. Note for example that Miki clearly suggests that by applying high frequency sound waves it is possible to "increase the washing effects" and to "shorten washing time" (see Miki col. 6, lines 64-67). As for the claimed function of the sonic energy exposing fresh contamination and rendering it more subject to oxidation, given that all of the structure



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as claimed is the same as that as disclosed by the combination of references, the functions as claimed is deemed to be inherent. All of the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination, (i.e., the combination of known old elements into a single device) would have yielded predictable results to one of ordinary skill in the art at the time of the invention. Re claim 17, Izumi (see figs. 2 and 5) and Fishkin (see figs. 2 and 7) each discloses that it is old and well known to employ a semiconductor cleaning device in either a vertical or horizontal orientation and also note that Torek discloses that a "wide variety of rotating mechanisms could be used" (col. 8, lines 61-67). Re claim 18, Torek discloses the spent fluid valve (65). Re claim 33, absent any new or unobvious results and in view of the fact that appellant claims an "apparatus", to employ the specific speed it of little patentable weight.

***APPARATUS CLAIMS MUST BE STRUCTURALLY DISTINGUISHABLE FROM THE PRIOR ART***

>While features of an apparatus may be recited either structurally or functionally, claims<directed to >an< apparatus must be distinguished from the prior art in terms of structure rather than function. >In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429,1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference); see also In re Swinehart, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971);< In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959).

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“ [A]pparatus claims cover what a device is, not what a device does.” Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original).

**MANNER OF OPERATING THE DEVICE DOES NOT DIFFERENTIATE  
APPARATUS CLAIM FROM THE PRIOR ART**

A claim containing a “ recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987) (The preamble of claim

1 recited that the apparatus was “ for mixing flowing developer material” and the body of the claim recited “ means for mixing ..., said mixing means being stationary and completely submerged in the developer material” . The claim was rejected over a reference which taught all the structural limitations of the claim for the intended use of mixing flowing developer. However, the mixer was only partially submerged in the developer material. The Board held that the amount of submersion is immaterial to the structure of the mixer and thus the claim was properly rejected.).

Re claim 34, Izumi (see fig. 2), Fishkin (see fig. 2), Japan’522 (see fig. 3) disclose the perpendicular arrangement.

Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lampert et al. (U. S. Pat. No. 5,181,985) in view of Maekawa et al. (U. S. Pat. No. 5,868,866).

Re claim 35, Lampert is cited disclosing chamber;

apparatus comprising:

a chamber (col. 3, line 62-63);

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a rotor in the chamber for holding and rotating a workpiece (col. 6, line 8);

a liquid supply source (col. 2, line 33);

a liquid outlet (not shown) positioned to apply a liquid onto a workpiece in the chamber;

a liquid flow line connecting the liquid supply source to the liquid outlet (col. 2, lines 40-51);

a heater for heating the liquid (col. 2, lines 33-39);

an ozone gas generator (col. 5, lines 55-57);

an ozone gas supply line connecting the ozone gas generator to the chamber (col. 5, lines 47-53) that differs from the claim only in the recitation of the sonic energy source associated with the liquid outlet, and positioned adjacent to the workpiece for introducing sonic energy to the workpiece, with the sonic energy conducted to the surface of the workpiece through liquid flowing out of the liquid outlet. The patent to Maekawa is cited disclosing the sonic energy source as claimed (col. 6, lines 24-32). It therefore would have been obvious to one having ordinary skill in the art to modify the device of Lampert, to employ sonic energy as taught by Maekawa, for the purpose of enhancing the cleaning effect as is old and well known in the art as noted above.

#### **(10) Response to Argument**

Appellant primarily argues that the application of the liquid in Terek, is in the form of a spray and therefore, not applicable with the respective teachings of Izumi, Fishkin, Miki or Japan '522/Kobayashi, since as argued to be well known, that sonic energy cannot

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travel through a spray, because a spray is not an incompressible fluid, i.e., it is not solid or a continuous liquid. It should be noted that while Torek discloses a spray, it is the examiner position that it would have been obvious to one having ordinary skill in the art to have the spray in Torek associated with sonic energy as taught by Izumi, Fishkin, Miki of Japan'522/Kobayashi, since Izumi (at col. 7, lines 32-52 and col. 3, lines 49-58), Fishkin (at col. Col. 1, lines 21-32), Miki (at col. 19, lines 31-45) and Japan'522/Kobayashi (see fig. 4) all disclose the spraying of the liquids and fluids. It should be noted that Appellant's specification specifically defines the application of the liquid of as "controlled sprayed" at line 5 or paragraph [0006], as "sprays out through the nozzle" at lines 4-5 of paragraph [0021], and note "spray nozzle" in claim 16, lines 5-. It is the Examiner's position that given the structure as claimed being the same structure as disclosed in the applied prior art, Appellant's argument is of little merit. Also noted that Appellant argues a "fluid link" between the nozzle and the wafer, but no specific limitation has been claimed. As for the argument that Fishkin fails to disclose the claimed fluid layer, please note that Fishkin was only cited to discloses the obvious of employing sonic energy to a spray nozzle for enhanced cleaning as is common in the art. Torek discloses the layer as claimed (see abstract). As for Miki not disclosing the use of ozone, this teaching may be found in the disclosure of Torek. Miki was only cited to disclose the application of sonic energy to a spray nozzle as noted above. As for the argument that any ozone in Miki would be separated by the sonic energy, please note that this is deemed immaterial in that in the disclosure in Torek, discloses two methods of providing ozone (see abstract) where the ozone may be applied either mixed with the

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fluid spray prior to spraying or unmixed but provides an “ozone-rich environment” and the workpiece is then sprayed (abstract). The use of ozone and sonic energy to treat semiconductor wafer are both old and well known. It is the examiner’s position, that given the respective teachings of Torek, and either Izumi, Fishkin, Miki or Japan’522, especially where Torek teaches the use of ozone either mixed with the liquid prior to spraying, or not mixed with the water spray, it would have been obvious to modify Torek to employ sonic energy an enhanced cleaning effect as is old and well known in the art. As for the argument that Lampert fails to disclose the incompressible media as claimed, note the use of either an “aerosolized” medium and or the medium being “sprayed” (col. 2, lines 40-46) and again, as defined in Appellant’s specification as noted above, the medium is sprayed as well.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner’s answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/FRANKIE L. STINSON/  
Primary Examiner, Art Unit 1792

/ Roy King/

Supervisory Patent Examiner, Art Unit 1793

/Michael Barr/